IN THE CLAIMS:

Rewrite the pending claims and add new claims as follows:

Cancel claims 1-90.

1-90. (Cancelled)

91. (Currently Amended) A computer-implemented method, comprising:

displaying a graphical user interface for visualizing a dataset having [[a]] an inherent hierarchical dimension, wherein the hierarchical dimension includes a first dimension level and a second dimension level, the graphical user interface including a ~~metadata~~ schema display region and a data visualization region, wherein:

- the ~~metadata~~ schema display region includes at least ~~metadata~~ information about the first dimension level and the second dimension level, and
- the data visualization region includes a first axis shelf, a second axis shelf, and a visual table ~~plot window~~;

detecting user interactions with the ~~metadata~~ schema display region and the first and second axis shelves to associate the first and second dimension levels with either the first axis shelf or the second axis shelf, respectively; and

in response to the user interactions, forming in the visual table ~~plot window a visual plot~~ a plurality of panes, each pane having a first axis corresponding to the dimension level associated with the first axis shelf and a second axis corresponding to the dimension level associated with the second axis shelf.

92. (Currently Amended) The method of claim 91, wherein the ~~metadata~~ schema display region is generated by:

identifying one or more dimensions from the dataset;

generating an ordered list of dimension levels for at least one of the identified dimensions; and

displaying the dimensions and their associated ordered lists of dimension levels in the ~~metadata~~ schema display region.

93. (Currently Amended) The method of claim 92, further comprising:

identifying one or more measures from the dataset;

generating an ordered list of the identified measures; and

displaying the ordered list of measures in the ~~metadata~~ schema display region.

94. (Currently Amended) The method of claim 91, further comprising:

displaying an icon for the first dimension level in the ~~metadata~~ schema display region;

detecting a user selection of the icon in the ~~metadata~~ schema display region;

detecting a user selection of the first axis shelf in the data visualization region; and

moving a copy of the icon from the ~~metadata~~ schema display region into the first axis shelf in the data visualization region.

95. (Currently Amended) The method of claim 91, further comprising:

populating each pane in the visual table ~~plot~~ with at least a subset of the dataset in accordance with the arrangement of the first and second axes.

96. (Currently Amended) The method of claim 95, wherein populating each pane in the visual table ~~plot~~ further includes:

~~dividing the visual plot into one or more panes;~~

dividing the subset of the dataset into ~~one or more~~ a plurality of sub-subsets, each sub-subset having a set of data records and corresponding to a respective pane, wherein the set of data records includes a first set of data values associated with the first dimension level and a second set of data values associated with the second dimension level; and

generating a mark in a respective pane for each data record associated with the pane, wherein the mark is positioned along the first axis of the pane in accordance with the corresponding data value associated with the first dimension level and the mark is positioned along the ~~first~~ second axis of the pane in accordance with the corresponding data value associated with the second dimension level.

97. (Currently Amended) The method of claim 95, wherein populating each pane in the visual table ~~plot~~ further includes:

constructing a visual specification, wherein the visual specification defines a mapping from the dataset to each pane in the visual table ~~plot~~; and

retrieving data records from the dataset in accordance with the visual specification.

98. (Previously presented) The method of claim 91, wherein the first axis is in the horizontal direction and the second axis is in the vertical direction.

99. (Previously presented) The method of claim 91, wherein the hierarchical dimension is time and the first level is higher than the second level in the natural hierarchy of time.

100. (Previously presented) The method of claim 91, wherein the hierarchical dimension is location and the first level is higher than the second level in the natural hierarchy of location.

101. (Previously presented) The method of claim 91, wherein the hierarchical dimension is product and the first level is higher than the second level in the natural hierarchy of product.

102. (Currently Amended) A computer readable storage medium and a computer program mechanism embedded therein for forming a visual table ~~plot~~ from a dataset having [[a]] an inherent hierarchical dimension, wherein the hierarchical dimension includes a first dimension level and a second dimension level, the computer program mechanism comprising instructions that are executed by a computer system to:

display a graphical user interface for visualizing the dataset, the graphical user interface including a ~~metadata~~ schema display region and a data visualization region, wherein:

- the ~~metadata~~ schema display region includes at least ~~metadata~~ information about the first dimension level and the second dimension level, and
- the data visualization region includes a first axis shelf, a second axis shelf, and a visual table ~~plot window~~;

detect user interactions with the ~~metadata~~ schema display region and the first and second axis shelves to associate the first and second dimension levels with either the first axis shelf or the second axis shelf, respectively; and

form in the visual table ~~plot window a visual plot~~ a plurality of panes, each pane having a first axis corresponding to the dimension level associated with the first axis shelf and a second axis corresponding to the dimension level associated with the second axis shelf in response to the user interactions.

103. (Currently Amended) The computer readable storage medium and computer program mechanism of claim 102, further comprising instructions for generating the ~~metadata~~ schema display region, further including:

instructions for identifying one or more dimensions from the dataset;

instructions for generating an ordered list of dimension levels for at least one of the identified dimensions; and

instructions for displaying the dimensions and their associated ordered lists of dimension levels in the ~~metadata~~ schema display region.

104. (Currently Amended) The computer readable storage medium and computer program mechanism of claim 103, further comprising:

instructions for identifying one or more measures from the dataset;

instructions for generating an ordered list of the identified measures; and

instructions for displaying the ordered list of measures in the ~~metadata~~ schema display region.

105. (Currently Amended) The computer readable storage medium and computer program mechanism of claim 102, further comprising:

instructions for displaying an icon for the first dimension level in the ~~metadata~~ schema display region;

instructions for detecting a user selection of the icon in the ~~metadata~~ schema display region;

instructions for detecting a user selection of the first axis shelf in the data visualization region; and

instructions for moving a copy of the icon of the first dimension level from the ~~metadata~~ schema display region into the first axis shelf in the data visualization region.

106. (Currently Amended) The computer readable storage medium and computer program mechanism of claim 102, further comprising:

instructions for populating each pane in the visual table ~~plot~~ with at least a subset of the dataset in accordance with the arrangement of the first and second axes.

107. (Currently Amended) The computer readable storage medium and computer program mechanism of claim 106, wherein the instructions for populating each pane in the visual table ~~plot~~ further include:

~~instructions for dividing the visual plot into one or more panes;~~

instructions for dividing the subset of the dataset into ~~one or more~~ a plurality of sub-subsets, each sub-subset having a set of data records and corresponding to a respective pane, wherein the set of data records includes a first set of data values associated with the first dimension level and a second set of data values associated with the second dimension level; and

instructions for generating a mark in a respective pane for each data record associated with the pane, wherein the mark is positioned along the first axis of the pane in accordance with the corresponding data value associated with the first dimension level and the mark is positioned along the ~~first~~ second axis of the pane in accordance with the corresponding data value associated with the second dimension level.

108. (Currently Amended) The computer readable storage medium and computer program mechanism of claim 106, wherein the instructions for populating each pane in the visual table ~~plot~~ further include:

instructions for constructing a visual specification, wherein the visual specification defines a mapping from the dataset to each pane in the visual table ~~plot~~; and

instructions for retrieving data records from the dataset in accordance with the visual specification.

109. (Previously presented) The computer readable storage medium and computer program mechanism of claim 102, wherein the first axis is in the horizontal direction and the second axis is in the vertical direction.

110. (Previously presented) The computer readable storage medium and computer program mechanism of claim 102, wherein the hierarchical dimension is time and the first level is higher than the second level in the natural hierarchy of time.

111. (Previously presented) The computer readable storage medium and computer program mechanism of claim 102, wherein the hierarchical dimension is location and the first level is higher than the second level in the natural hierarchy of location.

112. (Previously presented) The computer readable storage medium and computer program mechanism of claim 102, wherein the hierarchical dimension is product and the first level is higher than the second level in the natural hierarchy of product.

113. (Currently Amended) A computer system, comprising:

one or more processors;

memory; and

one or more programs, wherein the one or more programs are stored in the memory and configured to be executed by the one or more processors, the programs including:

instructions for displaying a graphical user interface for visualizing a dataset having [[a]] an inherent hierarchical dimension, wherein the hierarchical dimension includes a first dimension level and a second dimension level, the graphical user interface including a ~~metadata~~ schema display region and a data visualization region, wherein:

- the ~~metadata~~ schema display region includes at least ~~metadata~~ information about the first dimension level and the second dimension level, and
- the data visualization region includes a first axis shelf, a second axis shelf, and a visual table ~~plot window~~;

instructions for detecting user interactions with the ~~metadata~~ schema display region and the first and second axis shelves to associate the first and second dimension levels with either the first axis shelf or the second axis shelf, respectively; and

instructions for forming in the visual table ~~plot window a visual plot~~ a plurality of panes, each pane having a first axis corresponding to the dimension level associated with the first axis shelf and a second axis corresponding to the dimension level associated with the second axis shelf in response to the user interactions.

114. (Currently Amended) The computer system of claim 113, further comprising instructions for generating the ~~metadata~~ schema display region, further including:

instructions for identifying one or more dimensions from the dataset;

instructions for generating an ordered list of dimension levels for at least one of the identified dimensions; and

instructions for displaying the dimensions and their associated ordered lists of dimension levels in the ~~metadata~~ schema display region.

115. (Currently Amended) The computer system of claim 114, further comprising:

instructions for identifying one or more measures from the dataset;

instructions for generating an ordered list of the identified measures; and

instructions for displaying the ordered list of measures in the ~~metadata~~ schema display region.

116. (Currently Amended) The computer system of claim 113, further comprising:

instructions for displaying an icon for the first dimension level in the ~~metadata~~ schema display region;

instructions for detecting a user selection of the icon in the ~~metadata~~ schema display region;

instructions for detecting a user selection of the first axis shelf in the data visualization region; and

instructions for moving a copy of the icon of the first dimension level from the ~~metadata~~ schema display region into the first axis shelf in the data visualization region.

117. (Currently Amended) The computer system of claim 113, further comprising:

instructions for populating each pane in the visual table ~~plot~~ with at least a subset of the dataset in accordance with the arrangement of the first and second axes.

118. (Currently Amended) The computer system of claim 117, wherein the instructions for populating each pane in the visual table ~~plot~~ further include:

~~instructions for dividing the visual plot into one or more panes;~~

instructions for dividing the subset of the dataset into ~~one or more~~ a plurality of sub-subsets, each sub-subset having a set of data records and corresponding to a respective pane, wherein the set of data records includes a first set of data values associated with the first dimension level and a second set of data values associated with the second dimension level; and

instructions for generating a mark in a respective pane for each data record associated with the pane, wherein the mark is positioned along the first axis of the pane in accordance with the corresponding data value associated with the first dimension level and the mark is positioned along the ~~first~~ second axis of the pane in accordance with the corresponding data value associated with the second dimension level.

119. (Currently Amended) The computer system of claim 117, wherein the instructions for populating each pane in the visual table ~~plot~~ further include:

instructions for constructing a visual specification, wherein the visual specification defines a mapping from the dataset to each pane in the visual table ~~plot~~; and

instructions for retrieving data records from the dataset in accordance with the visual specification.

120. (Previously presented) The computer system of claim 113, wherein the first axis is in the horizontal direction and the second axis is in the vertical direction.

121. (Previously presented) The computer system of claim 113, wherein the hierarchical dimension is time and the first level is higher than the second level in the natural hierarchy of time.

122. (Previously presented) The computer system of claim 113, wherein the hierarchical dimension is location and the first level is higher than the second level in the natural hierarchy of location.

123. (Previously presented) The computer system of claim 113, wherein the hierarchical dimension is product and the first level is higher than the second level in the natural hierarchy of product.

124. (Currently Amended) A computer-implemented method, comprising:

displaying a graphical user interface for visualizing a dataset having [[a]] an inherent hierarchical dimension and associated measure data, wherein:

the hierarchical dimension includes first and second dimension levels, and

the graphical user interface includes a ~~metadata~~ schema display region and a data visualization region, wherein:

the ~~metadata~~ schema display region includes ~~metadata~~ information about the dataset, including information about the first and second dimension levels; and

the data visualization region includes first and second axis shelves and a visual table ~~plot window~~;

enabling a user to interact with the ~~metadata~~ schema display region and the first and second axis shelves to associate the first and second dimension levels with either the first axis shelf or the second axis shelf, respectively;

in response to the user interaction, forming in the visual table ~~plot window a visual plot~~ a plurality of panes, each pane having a first axis corresponding to the dimension level associated with the first axis shelf and a second axis corresponding to the dimension level associated with the second axis shelf; and

populating each pane in the visual table ~~plot~~ with at least a subset of the measure data in accordance with the arrangement of the first and second axes.

125. (Currently Amended) A computer-implemented method, comprising:

displaying a graphical user interface for visualizing a dataset having [[a]] an inherent hierarchical dimension and associated measure data, wherein:

the hierarchical dimension includes first and second dimension levels, and

the graphical user interface includes first and second axis shelves and a visual table ~~plot window~~;

receiving user instructions to associate the first and second dimension levels with either the first axis shelf or the second axis shelf, respectively;

in response to the user instructions, forming in the visual table ~~plot window a visual plot~~ a plurality of panes, each pane having a first axis corresponding to the dimension level associated with the first axis shelf and a second axis corresponding to the dimension level associated with the second axis shelf; and

populating each pane in the visual table ~~plot~~ with at least a subset of the measure data in accordance with the arrangement of the first and second axes.

126. (New) The method of claim 91, wherein the dataset is a hierarchical, multidimensional, OLAP data cube.

127. (New) The method of claim 91, wherein the hierarchical dimension includes a third dimension level, the first, second, and third dimension levels having a natural order, and wherein the first axis of each pane corresponds the first and third dimension levels and the second axis of each pane corresponds to the second dimension level.

128. (New) The computer readable storage medium and computer program mechanism of claim 102, wherein the dataset is a hierarchical, multidimensional, OLAP data cube.

129. (New) The computer readable storage medium and computer program mechanism of claim 102, wherein the hierarchical dimension includes a third dimension level, the first, second, and third dimension levels having a natural order, and wherein the first axis of each pane corresponds the first and third dimension levels and the second axis of each pane corresponds to the second dimension level.

130. (New) The computer system of claim 113, wherein the dataset is a hierarchical, multidimensional, OLAP data cube.

131. (New) The computer system of claim 113, wherein the hierarchical dimension includes a third dimension level, the first, second, and third dimension levels having a natural order, and wherein the first axis of each pane corresponds the first and third dimension levels and the second axis of each pane corresponds to the second dimension level.

132. (New) The method of claim 124, wherein the dataset is a hierarchical, multidimensional, OLAP data cube.

133. (New) The method of claim 124, wherein the hierarchical dimension includes a third dimension level, the first, second, and third dimension levels having a natural order, and wherein the first axis of each pane corresponds the first and third dimension levels and the second axis of each pane corresponds to the second dimension level.

134. (New) The method of claim 125, wherein the dataset is a hierarchical, multidimensional, OLAP data cube.

135. (New) The method of claim 125, wherein the hierarchical dimension includes a third dimension level, the first, second, and third dimension levels having a natural order, and wherein the first axis of each pane corresponds the first and third dimension levels and the second axis of each pane corresponds to the second dimension level.